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Application of: Lenny LIPTON et al.

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Examiner: Elisa M. Rice

For: Stereoscopic format converter

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Sir:

SUPPLEMENTAL RESPONSE TO NOTICE OF NON-COMPLIANT AMENDMENT AND REVISED RESPONSE TO NON-FINAL OFFICE ACTION

Further to the previous response to Notice of Non-Compliant Amendment mailed June 7, 2010 ("Non-compliant amendment") and Non-Final Office Action mailed on November 27, 2009 ("Office Action"), Applicants respectfully submit the supplemental amendments presenting further amendment to the claims as indicated below. Applicants request reconsideration in view of the present submission.

Listing of the Claims begin on page 3 of this paper.

Remarks begin on page 9 of this paper.

LISTING OF THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently amended) A method of using a program stored on a storable medium for converting an input image having a source format to an output image having a desired stereoscopic format, wherein the input image and the output image are each defined by a plurality of pixels, comprising:

receiving the input image having the source format at a format converter configured to receive images in multiple formats and convert the images in multiple formats into images having stereoscopic formats;

identifying, using a support table matrix, display methods that are compatible with the source format of the input image;

allowing a desired display method to be chosen from identified compatible display methods, the desired display method corresponding to the desired stereoscopic format;

converting each pixel of the input image to a corresponding pixel for an output image in accord with a the support table matrix, which sets forth a predefined relationship between the source format and the desired stereoscopic format, thereby creating the output image; and

displaying the formatted output image using the desired display method.

2. (Previously presented)   The method of claim 1, further comprising creating the

support table matrix to set forth predefined relationships between one type of format as

an input image and another type of stereoscopic format as an output image.

3. (Original) The method of claim 1, wherein the converting step comprises the

sequential steps:

      converting the color space of the input image;

      scaling the input image;

      creating additional views as needed;

      swapping views;

      preparing a presentation of the output image for a particular format type;

      centering the presentation;

      formatting the presentation thereby creating a formatted output image; and

      displaying the formatted output image.

4. (Original)   The method of claim 3, further comprising inverting the input image after

the scaling step and before the creating step.

5. (Original)   The method of claim 3, further comprising aligning the views after the

creating step and before the swapping step.

6. (Original)   The method of claim 3, further comprising arranging a predefined view

wherein a single frame contains nine views, then interzigging the views, after the

swapping step and before the preparing step.

7. (Original)   The method of claim 1, wherein the input image is a planar image, further comprising creating a stereo image pair from the planar image.

8. (Original)   The method of claim 7, wherein the creating step comprises:

> scaling the planar image by a fixed percentage to create a scaled image;
>
> copying the scaled image to create a complimentary image;
>
> shifting the complimentary image by a smaller percentage of the fixed percentage;
>
> extracting a centered image from the scaled image; and
>
> extracting a centered image from the shifted complimentary image.

9. (Canceled)

10. (Previously presented)   The method of claim 8, wherein the smaller percentage is half.

11. (Previously presented)   The method of claim 7, wherein the creating step comprises:

> scaling the planar image by a fixed percentage to create a scaled image;
>
> copying the scaled image to create a complimentary image;
>
> skewing the complimentary image;
>
> extracting a centered image from the scaled image; and

extracting a centered image from the shifted complimentary image.

12. (Previously presented)   The method of claim 11, wherein the complimentary image is skewed by approximately half.

13. (Previously presented)   A device for converting an input image having a source format to an output image having a desired stereoscopic format, wherein the input image and the output image are each defined by a plurality of pixels, comprising:

a software-enabled matrix that sets forth predefined relationships between one format for image input and a different format for image output, wherein the software-enable matrix is operable to be used to identify display methods that are compatible with the source format of the input image; and

a processor configured to receive images in multiple formats and convert images received in multiple formats into images in stereoscopic format and further configured to identify the source format of the input image, allow a desired display method to be chosen from compatible display methods, and convert the input image using the matrix to an output image having the desired stereoscopic format corresponding to the desired display method.

14. (Previously presented)   A device according to claim 13, wherein the software-enabled matrix contains for each type of image format a pre-defined correspondence between a pixel from the input image and a pixel for the output image.

15. (Previously presented)   The method of claim 1, wherein the source format is planar.

16. (Currently amended) A method of using a program stored on a storable medium for converting an input image in a source stereoscopic format to an output image having a desired stereoscopic format, comprising:

receiving the input image in the source stereoscopic format at a multiple format image converter configured to receive input images in different stereoscopic formats and convert input images in various stereoscopic formats into images having different stereoscopic formats;

identifying, using a support table matrix, display methods that are compatible with the source stereoscopic format of the input image;

allowing a desired display method to be chosen from identified compatible display methods, the desired display method corresponding to the desired stereoscopic format; and

converting each pixel of the input image to a corresponding pixel for the output image in accord with the support table matrix, which sets forth a predefined relationship between the source stereoscopic format and the desired stereoscopic format, thereby creating the output image.

17. (Previously presented)   The method of claim 16, wherein converting comprises creating the map as a matrix that sets forth predefined relationships between one type of stereoscopic format as an input image and another type of stereoscopic format as an output image.

18. (Previously presented) The method of claim 16, wherein converting comprising:

converting the color space of the input image;

scaling the input image;

creating additional views needed;

swapping views;

preparing a presentation of the output image for a particular format type;

centering the presentation;

formatting the presentation thereby creating a formatted output image; and

displaying the formatted output image.

19. (Previously presented) The method of claim 18, further comprising inverting the input image after scaling and before creating.

20. (Previously presented) The method of claim 18, further comprising aligning the views after creating and before swapping.

21. (Previously presented) The method of claim 18, further comprising arranging a predefined view wherein a single frame contains nine views, then interzigging the nine views, after swapping and before preparing.

REMARKS/ARGUMENTS

As indicated in the Office Action, clams 1-8 and 10-21 were rejected as being unpatentable under 35 U.S.C. § 103. Claims 1, 2, 7, 13-17 were rejected under 35 U.S.C. § 103 for being unpatentable over U.S. Patent Pub. No. 2002/0122585 to Swift et al. ("*Swift '585*") in view of U.S. Patent No. 5,481,275 to Mical ("*Mical*"). Claims 3-6, 8-12, and 18-21 were rejected under 35 U.S.C. § 103 for being unpatentable over Swift '585 in view of Mical and U.S. Patent No. 5,982,941 to Loveridge ("*Loveridge*"). Applicants respectfully traverse the various grounds of rejections for at least the reasons set forth below.

Claim 1 recites a method of converting an input image of a source format to an output image of a desired stereoscopic format, including in part, the approach of "**identifying** ... **display methods that are compatible** with the source format of the input image ...," and "**allowing a desired display method to be chosen from identified compatible display methods** ...." Similar elements are also included in independent claims 13 and 16. As disclosed at page 7, line 25 to page 8, line 8 of Applicants' Specification, a support matrix table may be configured to contain information to establish whether the combination of converting the first format to the second format for a desired display method is *possible* to produce, and whether the combination is supported by a viewer to display the output images in the desired display method. Such a support matrix table may be "used to *prevent invalid combinations* from being available and selectable by the user." *Id* at page 8, lines 7-8.

Applicants respectfully assert that the steps of identifying compatible display methods and allowing a desired display method to be chosen from compatible display

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methods are wholly missing in *Swift* '585. It is alleged in Office Action (at page 5) that

the claimed elements of "identifying display methods that are compatible with the source

format of input; allowing a desired display to be chosen from identified compatible

display methods" were disclosed in Figure 9 of *Swift* '585, which shows "a webpage with

several display format options, the script buttons." Below is a copy of paragraph 51 of

the *Swift* '585 patent, which describes the disclosure of Figure 9 of *Swift* '585.

[0051] Using a script system, the viewing system is instructed to change display modes on the fly. The user can issue a command using a script to specify any viewing mode. All stereoscopic media files that are displayed on that web page are then dynamically switched to the new viewing method. FIG. 9 illustrates a script command to set the display mode to Color Anaglyph **900**. The Web Page as received has media files as illustrated by Stereo Image Grey Anaglyph **904**; Stereo Image Color Anaglyph **906**; Stereo Image Cross-eye **908** and Stereo Image Parallel **910**; Stereo Image Interleaved **912**; and Stereo Image Interleaved **914**. With the Button: Set to Display mode to Color Anaglyph **916**, the Script Commands sets the Display Mode Color Anaglyph **918**. The system converts all the media files to Color Anaglyph as illustrated by files **920** through **930**. This embodiment is critical in providing an easy to use 3D stereoscopic viewing system.

According to paragraph 51 as shown above, *Swift* '585 discloses a script system that

receives different types of media files 904, 906, 908, 910, 912, and 914, and "converts **all**

the media files to Color Anaglyph as illustrated by files 920 through 930. *Swift* '585,

however, neither contemplates the possibility that one or more source formats 904, 906,

908, 910, 912, and 914 may be *incompatible* with the chosen Color Anaglyph format nor

provides a way to identify and distinguish compatible display methods from incompatible

display methods. As such, *Swift '585* has failed to disclose "identifying … display methods that are compatible with the source format of the input image …," and "allowing a desired display method to be chosen from identified compatible display methods …." as required by independent claims 1, 13, and 16.

The deficiency of *Swift '585* is not cured by *Mical* or *Loveridge*, both of which are entirely silent on "identifying … display methods that are compatible with the source format of the input image …," and "allowing a desired display method to be chosen from identified compatible display methods …." as required by independent claims 1, 13, and 16. Applicants thus respectfully submit that the teachings of *Swift '585*, *Mical*, and *Loveridge*, even when combined, do not teach or suggest every element of claims 1, 13, and 16 and cannot support a *prima facie* case of obviousness. Accordingly, for at least the reasons detailed above, Applicants respectfully request the withdrawal of the rejections under 35 U.S.C. § 103 with respect to claims 1, 13 and 16 and all claims dependent therefrom.

CONCLUSION

Based on the above Amendments and remarks, Applicants respectfully assert that the pending claims are in condition for allowance and, as such, a Notice of Allowance is respectfully requested. Applicants believe that no additional fees are necessitated by this response. The Commissioner is hereby authorized to charge any additional fees required by this response to our Deposit Account No. **13-0480** (Attorney Docket No. 95194936-044021).

Respectfully Submitted,

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